

XXVI.—*Descriptions of new Species of Sphegidae and Cero-  
palidae from the Khasia Hills, Assam.* By P. CAMERON.

**Sphegidae.**

*Crabro himalayensis*, sp. n.

Length 10 mm. ♀.

Belongs to Bingham's (Fauna of Brit. India, Hymen. i. p. 322) division "B. Abdomen non-petiolate" and to a new section "Enclosed space at base of median segment punctured."

Black; the antennal scape beneath, two broad lines on the top of the pronotum, and marks on the sides of the abdominal segments, yellow; wings almost hyaline, the stigma fuscous, the nervures darker in colour. Vertex sparsely, the front more strongly and closely punctured and thickly covered with longish black hair; the lower part of the front, face, and clypeus covered with silvery pile. Mesonotum closely, the scutellum more sparsely punctured, its base in the centre smooth. Metanotal area distinctly punctured, the sides with a few indistinct striae, the middle with a broad and deep longitudinal furrow, which has a few transverse striae; the apical slope has, on the top, some minute scattered punctures, its apex and sides finely and closely transversely striated; the middle furrow is deep; the furrow bounding the enclosed space striated. Upper part of propleurae indistinctly striated, the lower with two distinct divisions of curved striae. Mesopleural furrow deep, crenulated, the part at its base striated. Basal half of metapleurae closely, minutely, obliquely striated. Mesosternum covered with longish, soft, white hair.

*Crabro monozonus*, sp. n.

Black; a broad yellow line on the pronotum, one on the apex of the second abdominal segment, the apex of the anterior femora broadly, the fore tarsi and the anterior tibiae in front, yellow. Wings smoky fuscous, the nervures and stigma black. ♀.

Length 9 mm.

Metanotal area obliquely striated, but not strongly, and with a narrow furrow down the centre. Front and vertex opaque, closely and distinctly punctured and covered with long blackish hair; there is no furrow below the ocelli. Face and clypeus thickly covered with silvery pubescence;

the latter not keeled in the middle, its apex broadly rounded. Mesonotum and scutellum closely punctured, the former with a narrow keel down the middle. Pleuræ smooth, thickly covered with short white hair; the furrows crenulated. Fore tarsi covered with broad leaf-like spines. Pygidium not depressed, keeled, or punctured. Abdomen sessile.

#### CERCERIS.

##### a. *Metanotal area punctured.*

##### *Cerceris bimaculata*, sp. n.

Black; a large semicircular mark on the cheeks touching the eyes, a triangular mark below the antennal keel, the clypeus (except for a broad black line on the apex), a broad band on the pronotum, the sides of the scutellum broadly, the base of the second abdominal segment, almost the apical half of the third, and a narrow interrupted line on the fourth and fifth segments, rufous. Wings smoky fuscous, lighter behind, the stigma fulvous. ♀.

Length 10 mm.

Front and vertex closely and strongly, the cheeks closely and less strongly, and clypeus more sparsely punctured. Apex of clypeus slightly waved, the outer of the three projections the larger. Antennal keel stout, black. Mesonotum closely, rugosely punctured. Metanotum with area closely punctured, the apex with two shining foveæ. Mesopleuræ reticulated, the pro- and metapleuræ aciculated. Pygidium irregularly rugosely punctured; the sixth ventral segment has on the sides, at the apex, a patch of fulvous pubescence; the hypopygium entire.

May be known from *C. himalayensis* and *canaliculata* by the scutellum being broadly rufous at the sides. The four anterior tibiæ and the anterior tarsi in front are testaceous.

##### *Cerceris canaliculata*, sp. n.

Black; the face, lower inner orbits widely, clypeus (except at the apex), a band on the pronotum, the base of the second abdominal segment, the apical half of the third, and a narrow line on the sides of the fourth segment, rufous. Wings fuscous, if anything darker in front, and with a slight violaceous tint. Legs black, the four anterior tibiæ testaceous in front. ♂.

Length 10 mm.

Metanotal area closely and distinctly punctured; the sides obliquely striated; on the apex of the segment are three furrows, the central being the larger; the hair on it is long and fuscous. Lower orbits and sides of clypeus covered with pale golden pubescence. Front and vertex closely and somewhat strongly punctured and covered with long fuscous hair; the face and clypeus less strongly punctured. Mesonotum and scutellums closely and strongly punctured. Propleuræ aciculated, the middle of the mesopleuræ reticulated, the perpendicular striæ more distinct than the longitudinal; the metapleuræ aciculated. Pygidium only slightly narrowed at the extreme apex, being of almost equal width throughout; it is irregularly rugosely punctured, except at the apex.

Belongs to Bingham's section B: *C. himalayensis* differs from it in the apex of the clypeus broadly projecting and transverse, whereas in the present species it is broadly rounded; this species wants the yellow marks behind the eyes and the central furrow on the apex of the median segment is clearly defined.

*Cerceris himalayensis*, sp. n.

Black; the face, inner orbits widely, the antennal keel, clypeus (except at the apex), and a small spot behind the eyes near the top, rufous; a broad line on the pronotum, scutellums, a broad band on the base of the second abdominal segment, a narrower one on the apex of the third, a narrow one on the apex of the fourth, and a narrow interrupted line on the apex of the fifth, yellow. The four anterior tibiæ yellowish in front. Wings hyaline, the basal half of the anterior and the radial and cubital cellules smoky; stigma fulvous, nervures black. ♀.

Length 10 mm.

Front and vertex strongly and closely punctured, the front more coarsely than the vertex; the clypeus sparsely, the cheeks closely and coarsely punctured. Apex of clypeus with a slight broad incision. Mesonotum closely, the scutellum, if anything, more strongly punctured; the metanotal area closely rugosely punctured. Pro- and metapleuræ coarsely aciculated; the mesopleuræ coarsely punctured, above the middle, on the basal half, is a wide longitudinal furrow. Median segment above thickly covered with long fuscous hair. Pygidium closely rugosely punctured; the apex of the hypopygium almost transverse.

*Cerceris intimella*, sp. n.

Black; the clypeus (except at the apex), the inner orbits broadly to the top of the antennal keel, the keel, a spot behind the top of the eyes, a line on the pronotum, the scutellums, the apex of the first abdominal segment, the base of the second more broadly, the apex of the third, and a narrow more or less interrupted line on the fourth and fifth, yellow. Wings hyaline, broadly fulvous smoky in front, the costa and stigma fulvous, the nervures fuscous. Four anterior tibiae testaceous in front. ♀.

Length almost 15 mm.

Front and vertex closely distinctly punctured, more closely and finely behind the ocelli; clypeus sparsely punctured, the apical incision large, semicircular; the pubescence on the lower part of the inner orbits dense and silvery, on the rest long, fuscous. Pronotum closely and minutely, the mesonotum and scutellum closely distinctly, the postscutellum closely minutely, punctured; the scutellum with a slight depression in the middle. Metanotal area closely strongly punctured like the rest of the segment; the pubescence on it is black. Pro- and metapleuræ alutaceous, the former with a few obscure striæ, the latter irregularly striated at the base; the mesopleuræ strongly punctured. Pygidium closely irregularly reticulated, becoming slightly narrowed from the middle to the apex.

Comes into Bingham's section B. b.

b. *Metanotal area striated.*

*Cerceris rufoplagiata*, sp. n.

Black; the scape and pedicle of the antennæ, the inner eye-orbits from opposite the base of the antennæ, the antennal keel, a mark on the top of the clypeus, and its outer edge below, yellow; the upper part of the prothorax, the apex of the mesonotum in the middle and at the sides, the scutellums, a mark on the propleuræ, one behind the tubercles, the tubercles, the first abdominal segment above, with a black mark in the middle behind, the base of the second broadly, its apex narrowly, the apical two thirds of the third, and the apices of the following three segments narrowly, rufous. Wings smoky hyaline, darker in front, the stigma fulvous. Legs black, the anterior femora and tibiae red. ♀.

Length 7 mm.

Front and vertex strongly, closely, and uniformly, the face less closely punctured, almost smooth in the middle.

Clypeus broadly rounded in the middle at the apex and densely covered with silvery pubescence. Mesonotum and scutellum rather strongly punctured. Metanotal area obliquely striated, the rest strongly and rather irregularly punctured. Propleuræ strongly obliquely striated; the mesopleuræ (except at the base) strongly and uniformly punctured. The base of the metapleuræ smooth, irregularly and finely striated above and below, the apex rugose. Pygidium rather strongly, but not very closely punctured.

The obliquely striated metanotal area brings this species into Bingham's section *C. b* near to *C. Elizabethæ*.

*Cerceris aureobarba*, sp. n.

Black; the clypeus (except at the apex), a mark above it, produced on the top into a narrow point, a large semicircular mark on the face touching the eyes, the third abdominal segment (except at the base), and the apices of the fourth, fifth, and sixth narrowly, yellow. Legs black, the four anterior tibiæ (except for a black line behind) and the basal joint of the tarsi yellow. Wings hyaline, smoky in front. ♂.

Length 9 mm.

Belongs to Bingham's section *C. b*.

Front and vertex strongly and deeply punctured, the punctures running into reticulations and on the front into striæ; the cheeks and clypeus covered with silky pubescence, the sides of the clypeus fringed with long golden hair. The sides of the pronotum, tegulæ, and postscutellum rufous. Pro- and mesonotum rugosely punctured, the centre of the former irregularly striated behind. Metanotum stoutly obliquely striated; the rest of it is more strongly punctured than the mesonotum. Top of propleuræ smooth, with three foveæ, the middle has three stout curved striæ, the lower part irregularly rugose. Mesopleuræ rugosely punctured (except behind, where it is finely striated above, aciculated below). Metapleuræ rugosely punctured, the base stoutly obliquely striated. Base of pygidium stoutly punctured, minutely punctured between; the hypopygium is roundly, but not deeply, incised at the apex.

*c. Metanotal area smooth.*

*Cerceris lepcha*, sp. n.

Black; the antennal scape below, a large mark on the face, triangular above, the inner orbits, the clypeus (the

yellow reaching to the eyes), the greater part of the antennal keel, the base of the mandibles, a line on the pronotum, the greater part of the scutellum, postscutellum, a line on the sides of the apex of metanotum (rounded above, transverse below), yellow. The base of the second abdominal segment all round pallid yellow, the apical two thirds of the second, the apex of the fifth, and the apical segments entirely, rufous yellow. Legs black, the anterior tibiae testaceous; all the knees, trochanters, and the extreme base of the tibiae yellow. Wings hyaline, the radial and the apical cubital cellules smoky, the stigma and nervures black. ♂.

Length 8 mm.

Basal joints of antennal flagellum brownish beneath, as are also the apical more obscurely. Front and vertex strongly but not very closely punctured; thickly covered with white hair, as are also the face and clypeus. Mesonotum shining, sparsely punctured, thickly covered with short white hair. Scutellum furrowed down the centre. Median segment sparsely punctured; the central furrow shallow and ending at the apex in two distinct foveae; the basal area smooth and shining. Lower side of propleurae with some curved striae; the mesopleurae strongly punctured; the apex of the metapleurae sparsely punctured and thickly covered with white hair. Pygidium strongly, but not closely, punctured.

*Tachysphex bituberculata*, sp. n.

Length 11 mm. ♀.

Black; the head and thorax densely punctured, the upper part of the front covered with a short pile, the lower, laterally, thickly with silvery pubescence, the middle furrowed; above the antennae are two shining, smooth, oblique tubercles. Face and clypeus closely punctured, thickly covered with silvery pubescence; the apex of clypeus obliquely depressed, smooth and shining before the middle; the apex projects broadly in the middle. Base of mandibles thickly covered with silvery pubescence. Mesonotum thickly covered with short white pubescence. Scutellum more shining, and, if anything, more widely punctured than the mesonotum. Base of metanotum closely reticulated all over; the oblique apex rugose and furrowed narrowly in the middle. Propleurae above closely rugosely punctured, below shining, aciculated, and sparsely punctured. Mesopleurae closely distinctly punctured; behind the base is a wide, not very deep furrow obscurely striated; immediately below the

tegulae is a deep depression, with an oblique slope at the base. The upper part of metapleuræ with some sharp, irregular, distinct, clearly separated keels; the rest closely covered with striæ, which become stronger towards the apex. Legs pruinose, the anterior calcaria and spines pale. Wings hyaline, the apex with a narrow fuscous band; the nervures behind the stigma pale yellow; the first recurrent nervure is received shortly behind, the second in the middle of the cellule. Abdomen with brown pruinose bands; pygidium bare, aciculated, its apex more shining and distinctly punctured laterally; the sides sharply keeled; base of hypopygium smooth, the rest punctured.

*Notogonia fuscinerva*, sp. n.

Length 13 mm. ♀.

Agrees in coloration with *N. subtessellata*; may be known from it by the first transverse cubital nervure not having a gradual curve from the top to the bottom, but is distinctly elbowed; the second recurrent nervure is not so oblique, its bottom being opposite to its top, this being not the case with *N. subtessellata*, and the apices of the metasternal lobe are broader and more rounded.

Black; densely covered with a silvery pile, the pile on the mesonotum darker, more golden in tint. Wings hyaline, iridescent, the apex steel-blue, the nervures fuscous; the first transverse cubital nervure is distinctly elbowed in the middle, the two parts having an oblique straight slope; the second cubital cellule has the length of the third; the two recurrent nervures are received before the middle; the apex of the radius has an oblique slope. Legs thickly pruinose; the hind femora red, except at the extreme apex; tarsal spines rufous.

Head aciculated, the three depressions on the front deep; the central furrowed down the middle. Apex of clypeus smooth, glabrous, and with a small incision in the middle. Base of mandibles covered with depressed silvery pubescence, the middle rufous; palpi black, thickly covered with white hair. Median segment closely transversely striated; the furrow on apex deep and with oblique sides. Metasternal process broad, its sides raised, the apex incised, the lateral lobes broadly rounded. Abdominal segments broadly banded with silvery pile; the pygidium thickly covered with silvery, inclining to golden, pubescence; the hypopygium punctured, strongly at the apex.

*Notogonia aciculata*, sp. n.

Black ; covered with a silvery pile ; mandibles dark piceous towards the apex ; palpi dark testaceous and thickly covered with white pubescence. The wings from the transverse basal nervure distinctly fuscous-violaceous, behind it hyaline. Abdominal segments banded with silvery pubescence ; the pygidium closely punctured and thickly covered with pale pubescence ; the basal ventral segment strongly obliquely striated. ♀.

Length 9 mm.

Front and vertex alutaceous ; ocellus longer than broad, rounded, and having a longish narrow pedicle in front ; frontal furrow deep and obliquely widened above ; the depression on vertex shallow, indistinct. Pro- and mesonotum coarsely aciculated, the base of metanotum closely transversely striated ; a narrow keel down the middle ; on the sides of the apical slope are oblique, clearly separated striæ ; in the centre of the apex is a  $\Omega$ -shaped area indistinctly keeled in the middle. Propleuræ aciculated. Mesopleuræ distinctly and closely punctured ; the metapleuræ strongly obliquely striated on the basal half, the apical aciculated strongly and obscurely striated. Apical lobes of sternal process rounded ; the middle furrow is narrow. Second cubital cellule not much more than half the length of the third ; the first transverse cubital nervure curved, the second recurrent is received distinctly behind the middle of the cellule, the two are separated by about the length of the front of second cubital cellule.

*Notogonia khasiana*, sp. n.

Length 10 mm. ♀.

Agrees with *N. aciculata*, but is stouter, the wings not so distinctly hyaline at the base, the second cubital cellule longer compared with the third, the apical slope of the median segment is not so distinctly striated, the metapleuræ are only indistinctly striated at the base and apex, and the upper half of the first transverse cubital nervure has a straighter more oblique slope.

Ocellus longer than broad, triangularly produced in front ; the lower part of the front, face, and clypeus thickly covered with silvery pubescence. Mandibles obscure brownish in the middle. Palpi black, thickly covered with white pubescence. Mesonotum closely minutely punctured. Median segment with the basal two thirds finely transversely striated and furrowed down the centre ; the sides of apex obscurely

irregularly striated; on the sides of apex are four oblique keels. Pleuræ aciculated; the base and apex of the metapleuræ with a few oblique keels. Sternum thickly covered with silvery pubescence; the process bluntly triangular on the sides at the apex; the central part has the basal half distinctly dilated. Wings fuscous-violaceous; the second cubital cellule is, if anything, shorter than the first; the first transverse cubital nervure is obliquely bent from shortly below the middle; the second recurrent nervure received shortly beyond the middle of the cellule; the two nervures are separated by the length of the top of the second cubital cellule. Legs and abdomen pruinose; the pubescence on the pygidium bright fulvous; the leg-spines blackish.

*Notogonia vivax*, sp. n.

Black; the body and legs covered with silvery pubescence, the leg-spines black; wings hyaline, with a slight but distinct yellowish tint, the apex smoky; the costa, stigma, and nervures testaceous, the apical nervures darker; the second cubital cellule in front half the length of the third; the recurrent nervures received behind the middle and separated by slightly less than the length of the second cubital cellule in front. Pile on pygidium silvery, with a slight golden tint; the hypopygium closely and distinctly punctured. ♀.

Length 12 mm.

Front and vertex alutaceous; the ocellus rounded behind, in front produced into a process as long as itself, the furrow below it deep. Mesonotum alutaceous, the pile with a yellowish tint; propleuræ stoutly irregularly striated in the middle. Median segment alutaceous, the apical slope transversely striated, the striæ on the lower part finer than on the upper. Metapleuræ finely and closely obliquely striated.

This species has the yellowish-hyaline tinted wings of *N. tristis* and *N. jaculatrix*: the former may readily be known by the reticulated median segment; the latter is a larger and stouter insect, has the second cubital cellule on the top longer compared with the third, the tibial spines are shorter and rufous, not black, the pubescence on the front longer and denser, and the ocellus has only a short projection in front.

*Notogonia tegularis*, sp. n.

Black; the cheeks, face, and clypeus thickly covered with silvery pile; the front and vertex with fuscous hair; thorax

thickly covered with whitish pubescence, the pleuræ with a silvery pile. Legs densely covered with silvery pile; the tibial and tarsal spines, claws, and base of spurs rufous. Wings fuscous-violaceous, the nervures fuscous; the second and third cubital cellules equal in length in front; the second recurrent nervure received in the middle. Abdomen closely punctured and covered with pale pubescence; the apices of the second and third segments smooth, depressed; the penultimate segment and the pygidium thickly covered with fuscous pubescence, as is also the ventral surface. Tegulæ pale testaceous. ♀.

Length 13 mm.

Front strongly punctured above, distinctly furrowed down the middle, the lower part smooth and shining, widely furrowed, the furrow divided in two by a raised point; the lower part of vertex sparsely punctured, the upper smooth; the lateral depressions on front wide, the upper transverse one the deepest. Clypeus closely punctured (except at apex), its base thickly covered with fuscous pubescence. Mesonotum and scutellum closely punctured. Metanotum closely transversely striated, the striæ more widely separated at the base, where there is a small somewhat triangular keel. Metasternal process closely punctured, its base depressed; the two apical lobes rounded.

*Notogonia testaceicornis*, sp. n.

Black; the antennal scape rufous below, the flagellum rufo-testaceous, darker at the base; wings fusco-hyaline, the nervures testaceous, the second cubital cellule in front half the length of the third. Legs thickly covered with white pubescence; the tarsal spines and claws rufous. ♂.

Length 14 mm.

Comes near to *N. tegularis*; may be known from it by the second cubital cellule not being as long as the third.

Face, cheeks, and clypeus thickly covered with silvery, the vertex with fuscous, pubescence. Vertex almost impunctate; the ocellar region faintly behind, strongly and closely in front, punctured, broadly depressed, furrowed before the ocelli. Front smooth and shining above, the furrow smooth and shining, the upper part the larger. Clypeus (except at apex) closely punctured, the apex rounded. Mandibles rufous before the middle, the base punctured, thickly covered with white hair. Palpi dark testaceous. Mesonotum closely punctured, thickly covered with fuscous pubescence; the scutellum more shining, less closely punctured.

tured; postscutellum much more finely and closely punctured. Median segment closely and finely transversely striated and thickly covered with white pubescence. Metapleuræ (except at the base) finely punctured. Metasternal process raised in the middle behind and keeled in the centre of the raised part; the apical lobes rounded. Abdomen finely punctured, the apices of the basal four segments depressed; the middle and apical segments thickly covered with silvery pubescence; pygidium thickly covered with silvery pile; the penultimate segment bears long fulvous hair. Ventral surface thickly covered with silvery pubescence; the apical also with fuscous hair.

*Notomyia strenua*, sp. n.

Black, covered with silvery pubescence; pro- and mesothorax closely and distinctly aciculated, the clypeus smooth; front and vertex alutaceous, almost punctured; the lower furrow wide and deep. Basal part of median segment closely, distinctly, transversely striated, almost reticulated; the apex finely, but not very closely, transversely striated; the furrow deep, narrowed in the middle. Metapleuræ finely, uniformly, and closely obliquely striated. Sternal process depressed in the middle at the base, the apical incision long, not quite reaching backwards to the middle, the apical lobes rounded. Abdominal segments banded with silvery pubescence; the pubescence on pygidium white. Legs densely pruinose; the spines black. Wings fuscous-violaceous, the stigma and nervures black; the second cubital cellule in front about two thirds of the length of the third; the first transverse cubital nervure roundly curved and clearly bullated below the middle; the recurrent nervures are received shortly behind the middle and separated by about half the length of the second cubital cellule; the apical abscissa of radius is long, straight, and oblique. ♀.

Length 12 mm.

Ocellus longer than broad, its apex sharply pointed. Clypeus smooth and shining. Mandibles piceous before the apex.

*Notomyia sulcifrons*, sp. n.

Black, densely covered with silvery pubescence. Mandibles ferruginous, the base black, covered with white hair; palpi fuscous black, covered with white pubescence. Legs thickly covered with silvery pubescence, that on the femora